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ABSTRACT

The paper discusses various aspects of present practices in speech and language screening. It is suggested that in the future the predictiveness and cultural independence of screening devices should be increased. In addition, the need for earlier and more regular screening as well as use of non-speech personnel as test administrators is pointed out. Applicability of screening in the developing world is considered. (Author/SBH)

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SCREENING OF SPEECH AND LANGUAGE DISORDERS:

INTERNATIONAL PERSPECTIVE

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Abstract

Various aspects of present practices in speech and language screening were discussed. It was suggested that in the future the predictiveness and cultural independence of screening devices should be increased. In addition, earlier and more regular screening as well as use of non-speech personnel as test administrators should be considered. Applicability of screening in the developing world was also discussed.

Recently prevention has attracted considerable attention in speech and language pathology. Prevention is basically aimed at (a) preventing a future problem by eliminating conditions that would ultimately lead to said problem (primary prevention) or (b) an early diagnosis and therefore easier remediation (secondary prevention).

Although the initial cost of a prevention program may seen prohibitive, experiences in medicine and dentistry have shown that considerable monies are eventually saved because the time spent on full-blown problems is reduced. As the cost of special education spirals upwards, the potential savings make prevention an attractive alternative not only in the wealthier countries but more specifically in countries with limited financial resources.

The most desirable form of prevention is primary prevention. However, it is doubtful that it can be adequately applied in the near future, nor can it prevent all problems.

Through early diagnosis and treatment secondary prevention programs attempt to cancel or minimize the potentially cumulative effects of speech and language problems. Undiagnosed and untreated speech and language problems often are at the root of many a child's academic failure and social maladjustment.

The following discussion primarily deals with issues important to screening. The present situation will be studied and recommendations will be made concerning the development of screening procedures. Notice will also be paid as to how screening procedures might apply to the developing world.

GOALS OF SCREENING

Even though this paper only deals with screening, one should remember

that early identification in itself is not a cure, but must go hand in hand with intervention.

Screening can be roughly defined as the process of separating by means of test or procedure, those children having speech and language deficits. Usually a child's speech and language is sampled and compared against normal development. In addition, an attempt is made to predict whether the child needs remediation or whether he/she will outgrow the deficit without help and without developing problems in the social and academic areas (Ingram, 1976). Presently, prediction is largely dependent on the experience and clinical intuition of the individual administering the screening procedure.

AGE OF SCREENING

In many countries it is routine to screen the speech, language and hearing abilities of early school age children. In some places, children are also screened the year before they enter school. The trend appears to be towards an earlier diagnosis. This may be due to (a) our increased understanding of normal speech and language development, (b) improved testing procedures, (c) an increasing awareness of the importance of adequate speech and language skills, and (d) the realization that much agony for the child and time for the professionals can be saved if problems are treated early.

This had lead professionals such as Dr. Van Hattum (1976) to suggest that speech and language development should be examined as often as the status of health. He implies that screening should start before the age of one and continue on a regular basis at brief intervals. Under present conditions, this proposal sounds idealistic. More realistically screening could be done at certain crucial ages, such as 1.5 - 2.0 years when a

child's expressive skills start expanding and 4.0 - 4.5 years when basic grammar has been learned. These screenings could be in addition to a screening early at school.

SCREENING PERSONNEL

Screening has been traditionally performed by speech and language professionals. However, the present trend of reduced financing seems to be against the hiring of more professionals. Other possibilities must be explored. Nowhere is this more true than in the developing world where, for the most part, few or no speech professionals are available. Thus, it appears that more and more screenings will have to be administered by non-professionals. The use of non-professionals may also be more expedient. Frequently the screening consists of a 2-5 minute session with the child. It may be hard to obtain reliable results in this time frame because the child may (a) be apprehensive with strangers, (b) not be performing to his or her full potential on that day, (c) not want to talk openly in an unnatural situation. In the best of cases, the tester has only one occasion to obtain a sample. To overcome these problems, screening could be done by people that are familiar with the child and have perhaps more time to spend on the assessment.

In the following, the role of various individuals who could perform the screenings is discussed and some ideas are presented concerning their training for this purpose:

1. Medical doctors (Kulig and Baker, 1973) and public health nurses (Tuomi, 1976) are ideal for this purpose, in that they come into contact with the children and their families on a fairly regular basis. In addition, their recommendations usually carry considerable weight and their suggestions would have a better chance of being adhered to.

2. Paramedical personnel, such as health care workers living in the communities could assume the role of educating the public with regards to normal and atypical speech and language development.

3. Elementary school teachers learn to know their pupils well and are naturally interested in their speech and language skills. With a little training and a simple screening device, the approach has shown promise in London, Canada (Tuomi, 1978). The teachers' effectiveness, of course, depends on their class size and their personal dedication, but where cooperation can be secured, results are good.

4. Day care and nursery school teachers, in areas that offer these services, have an excellent chance to observe and test early speech development.

The training of these various professionals could be accomplished by including normal and atypical speech and language development, and the administration of screening procedures as part of their professional curriculum or as part of continuing education courses.

5. Studies have indicated that parents and other relatives frequently sense when something is wrong with the children in their family. This intuition, augmented by a basic knowledge of developmental milestones or by a screening test, would probably result in a relatively accurate diagnosis.

A powerful method of educating the parents and/or the relatives, would be to use the public news media, especially radio and television. Most of the countries have an adequate radio network and the advent of transistor radios has made it possible to listen to the broadcasts even when electricity is not available. On the radio instructions could be given as to what speech and language behaviours indicate that further testing is necessary and who is qualified to do this testing. Our own

department at the University of Western Ontario has had some experience with the power of radio. Last year we received approximately 20 "accurately diagnosed" patients as the direct ocutcome of a talk show on childhood dysfluency.

Due to its popularity, television has even more potential. In most countries (excluding North America and a few other countries) the number of channels is restricted. Consequently a captive audience is available and the impact of programs is impressive. This was shown in India where a satellite was used to transmit educational programs to remote areas.

For television use, films and videotapes could be made of both normal and atypical speech and language behaviours for various age ranges, and also of the administration of screening tests. These programs could also be accompanied by demonstrations of informal remediation measures. Five years ago, a local T.V. station in London, Canada scheduled a program on normal speech and language development with the result of considerably increased referrals to the local facilities.

Other potential methods for the education of the public are the utilization of:

(a) Newspaper and magazine articles.

(b) Written material such as booklets and pamphlets (perhaps during pre-natal examinations or classes).

(c) Public health and hygiene classes, of which descriptions of language development and screening methods would be a part. These classes could be especially valuable in cases where parents cannot read. A variety of audiovisual material such as films, videotapes and audio tapes could be utilized such as Teach Your Child to Talk - by CEBCO and Introduction of Speech and Language Disorders by Iowa State University in North America.

(d) Descriptions of normal and atypical speech and language development as part of the school curriculum during the highest compulsory grade to prepare future parents to observe these behaviours.

SCREENING TEST

At present there appears to be very little uniformity among screening devices. They vary according to their format and their objectives. Although considerable variation is acceptable it is felt that a good screening test should fulfill most of the following criteria:

(a) The ability to accurately determine the existence of any speech and language problem.

(b) The ability to predict spontaneous improvement.

(c) Applicability to various age ranges.

(d) Ease of administration and scoring.

Some presently available tests are concerned only with articulation (Van Riper and Erickson, 1970), some with articulation and receptive and/or expressive language (Rogers, 1972). Other tests sample voice, fluency, and attentive skills (Kulig and Baker, 1973). Some tests also assess pre-speech skills such as gross motor, fine motor and social skills (Frankenburg, Dodds and Fandal, 1970; Mechan, Jex, and Jones, 1973).

The majority of screening tests are based on the sampling of key developmental milestones. The most common approach is to test whether a behaviour that is normally expected for a specific age is evident. However, using "normal" behaviour as a yard stick is not completely reliable, basically due to a difficulty in defining an acceptable concept of normalcy (Sander, 1972). Language development varies greatly in its formative aspects as well as rate. Instead of testing whether certain

"normal" behaviours occur at an expected age, tests could concentrate on sampling commonly occurring abnormalities, especially those with a poor spontaneous improvement rating. The present author is in the process of testing this approach and initial results seem promising. However, the repertoire of highly predictive problem behaviours is still insufficient.

In addition to the difficulties in the selection of key screening items, the variability in normalcy creates problems in accurate prediction. Apparently most children eventually outgrow their problems (Roe and Milisen, 1942; Sax, 1972). How then can we decide cut-off ages for outgrowing speech and language problems? In school systems most problems are expected to disappear by the time that the child enters Grades one or two (age 6-7). This level is suggested because after this even a moderate speech and language problem can result in difficulties in other areas due to the increasing demands placed on the child's speech and language skills. Consequently, we should try to predict whether the problem speech behaviour will disappear by the time the child is due to enter Grade one or two.

Clearly, more research is needed to gain more information on prediction. If no predictive component is included in the screening too many children can be included in the deficient group. In a recent study (Tuomi and Ivanoff, 1977) it was found that although almost 50% of the children failed the screening at the grade one level, only 11% needed formal or informal remediation. Highly predictive screening tests are specifically needed in those countries with limited finances. This will save the time of the few specialists for the needy children.

While this information is being collected, certain behaviours or combinations of behaviours based on clinical experience can be used

to predict inability to outgrow problems. Some behaviours such as lateral lisp, lack of final consonants, inability to rapidly produce a sequence of sounds, inability to understand wh-questions, appear predictive of slow future development (Tuomi, 1978).

The screening tests should also be applicable to the testing of very young children. This might necessitate the use of separate forms of the same test for different age levels (Kulig and Baker, 1973) or possibly the use of graded performance criteria. With the very young children, screening could consist of testing such pre-speech skills as motor development, attentive skills and social interaction (Bzoch and League, 1971; Frankenburg, Dodds and Fandal, 1970).

The screening tests should be simple both to administer and to score to facilitate their use by laymen. Thus only behaviours observable during everyday activities should be emphasized. The test itself could consist of simple questions about specific behaviours to attain high reliability. For example, "Does the child turn his head towards you when you call his name?" The failure criteria could be based on a predetermined number of yes's and no's.

These types of screening items are already included in various scales of social development, e.g., Vineland Social Maturity Scale (Doll, 1965) or screening tests, e.g., Denver Developmental Screening Test (Frankenburg, Dodds and Fandal, 1970). Similar approaches were tried by the author in Classroom Teacher's Speech and Language Inventory: Kindergarten Level (Tuomi, 1978). Although some reservations were expressed by the teachers involved in the study about specific items, there was agreement on the benefits of the format.

From an international point of view a great problem of the present screening tests is their language and culture specificity. It would be

desirable to devise tests independent of language and cultural background, especially for countries with several languages and cultures contained within their borders such as India and many of the African countries. It would also be beneficial in countries such as Canada with a high immigrant population.

SCREENING IN THE DEVELOPING WORLD

Although references have been made to possible solutions in the developing world, several suggestions were idealistic. Many of these countries do not have compulsory education and their primary interest must of necessity be geared to training normal children, not those with handicaps. One might also hypothesize that due to cultural differences speech and language skills may not be considered vitally important in improving one's social or professional status, although the rapidly growing mechanization will require greater language skills in the future.

Due to economical and cultural factors, the goals of screening of speech and language skills will probably differ considerably from that in the developed world if it is used at all in the near future.

The screening could be used to assess:

(a) in the early preschool years whether, due to cultural, cognitive or other reasons, a child has delays in learning certain concepts and learning strategies basic for later academic and technical learning. The deficient areas could then informally be worked on, saving school time;

(b) just prior to entering school, whether a child's speech and language skills are adequate for school learning. This would be important if one must selectively admit children into school, because of lack of resources. The latter process would be somewhat opposite to normal screening practices,

i.e., rather than identifying potential problem children, those definitely without problems would be searched for.

When and if screening of speech and language problems becomes part of the health or educational system of the developing countries, the main emphasis will probably have to be on early diagnosis and informal remediation utilizing non-speech professionals. Thus developing methods of increasing the public knowledge of normal and atypical speech and language development and of how to arrange enriched environments for those who are delayed should be emphasized.

Finally, I would like to point out that no matter how carefully we structure the screening devices, how well we train the people to administer them, nothing can be accomplished if the public does not perceive the importance of these procedures and the importance of adequate speech and language skills. Thus it may well be that to get the cooperation of the public from the very beginning a Governmental blessing in the form of legislation or a reward system may be needed. In addition, an organizational structure must be created to handle the screening, preferably based on the existing educational or health delivery systems as described earlier in the paper.

In summary then, this author briefly attempted to evaluate: the time of screening, the delivery system and the structure of screening tests themselves. The changes suggested included the increased use of non-speech professionals, earlier and more regular screening. In addition, increased predictiveness, independence of cultural and language background of the screening tests should be considered. It was also felt that the present forms of screening may not be applicable to the developing world.

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